<Poster Session>Construction of advanced biologging systems for high rates of data-recovery -a challenging study to clarify the dynamics of fish populations and communities-

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CITATION:

Miyashita, Kazushi ...[et al]. <Poster Session>Construction of advanced biologging systems for high rates of data-recovery -a challenging study to clarify the dynamics of fish populations and communities-. 20th Symposium of the International Society on Biotelemetry Proceedings 2014: 87-87

ISSUE DATE:

2014-05

URL:

http://hdl.handle.net/2433/187831

Poster Session

Construction of advanced biologging systems for high rates of data-recovery - a challenging study to clarify the dynamics of fish populations and communities-

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Abstract

The monitoring of marine top predators, primarily fish species, provides important insights into marine ecosystems. Recently, biologging techniques involving electronic data-storage tags and acoustic transmitters have been increasingly used to understand migratory fish movements and behaviours. The number of tags, however, is normally limited due to costs, and the tag recovery rate is still low. In this study, therefore, to reveal the population and community dynamics of fishes in open waters, we will develop a new variety of small, low-cost, large-data-capacity and multifunctional tags, and implement the high recovery rate of the data. This study consists of the following four development: (1) two types of archival tags (small-sized tags and customizable-multifunctional tags), (2) the energy harvesting system installed in the tag, (3) the data receiving system onboard multi-platforms, and (4) the inter-individual communication system based on hydro-acoustic methods. Lastly, combining them, we will develop a new biologging system and test the practical utility of this system using wild herrings and bonitos in open waters off Japan. The new technology will overcome the bottleneck of conventional biologging techniques, and will lead to a breakthrough in marine ecosystem studies.

***Keywords**: biologging, biotelemetry, electronic data-storage tags, transmitters, monitoring*